UNITED STATES PATENT AND TRADEMARK OFFICE

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 January 2010*.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3-23,26-32 and 35* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3-23,26-32 and 35* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

    1.☐ Certified copies of the priority documents have been received.

    2.☐ Certified copies of the priority documents have been received in Application No. _____.

    3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☒ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date *01/12/2010*.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application

6)☐ Other: _____ .

DETAILED ACTION

Claim Rejections - 35 USC § 103

1.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

2.   Claims 1, 3-7 and 26-32 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Mittal et al., (US Patent No. 7,076,645), (hereinafter Mittal), and

further in view of Bruckert et al., (US Publication No. 2002/0049859), (hereinafter

Bruckert) and Talluri et al., (US Patent No. 6,748,429), (hereinafter Talluri).

Regarding claims 1 and 26, Mittal discloses receiving, at a single console control point

for a network device cluster [Mittal, column 2, line 34, management computer], user

input [Mittal, column 2, lines 41-42, an administrator] specifying an operation to perform

on the cluster as a whole [Mittal, column 2, line 39, reboot cluster]; and

automatically performing the specified operation on a plurality of active members in the

cluster [Mittal, column 2, lines 41-43, the administrator gives the command and does not

have to do anything further] by transforming the specified operation into one or more

device-specific operations for each of the plurality of active members [Mittal, column 2,

lines 43-46, from the cluster request to reboot the cluster, each member is given a

specific command (transforming the cluster command to device-specific operations) to

reboot independently from other members of the cluster members (so as not to have all

members rebooting at the same time)];

wherein the user input specifies a configuration command for the cluster [Mittal, column

2, lines 39-46, reboot the cluster members];

automatically communicating the configuration command to each of the active members

in the plurality of active members [Mittal, column 2, lines 39-46, administrator gives the

command to reboot cluster and need not do anything further while the members are

rebooted (without rebooting all members at the same time)].

Mittal does not specifically disclose concurrently on a plurality of active routers in the

cluster as a whole;

wherein the cluster comprises a first switch device, the plurality of active routers, one or

more standby routers, and a second switch device.

However, Bruckert discloses a clustered system [Bruckert, figures 1a-1b, paragraph 27,

line 1] including switches and routers [Bruckert, figures 1a-1b, items 106 and 114,

paragraph 27, lines 8-11 and paragraphs 106 and 112, showing multiple routers and

multiple switches as part of a cluster (figures 1a-1b, items 106 and 114), which is part of

a larger cluster (figures 1a-1b, items 10a and 10b), being managed].

It would have been obvious to one having ordinary skill in the art at the time the

invention was made to include a cluster of routers and switches in order to ensure that

the fabric connecting end nodes would be as failsafe as a cluster of end nodes.

Further, Talluri discloses modifying the configuration file of all the nodes in a cluster

[Talluri, column 6, lines 47-49, all nodes within the cluster are concurrently modified, as

such, all active nodes are updated and column 4, lines 1-14].

It would have been obvious to one having ordinary skill in the art at the time the

invention was made to include concurrently modifying the nodes within a cluster in order

to make updates to all the nodes effective at the same (or close to the same time) so

that none of the nodes or transactions are out of sync.

Regarding claim 27, Mittal-Bruckert-Talluri further discloses the receiving step

comprises receiving user input specifying a configuration command for the cluster

[Mittal, column 2, lines 39-40]; and

wherein the performing step comprises automatically communicating the configuration

command [Mittal, column 2, lines 39-46] to each of the active routers in the plurality of

active routers [Bruckert, paragraph 27].

Regarding claims 3 and 28, Mittal-Bruckert-Talluri further discloses subscribing a

management process to an event bus [Mittal, figure 1 and column 2, line 65 – column 3,

line 11];

subscribing each of the active routers [Bruckert, paragraph 27] to the event bus [Mittal,

figure 1 and column 2, line 65 – column 3, line 11]; and

publishing the configuration command in an event on the event bus [Mittal, figure 1 and

column 2, line 65 – column 3, line 11.

Regarding claims 4 and 29, Mittal-Bruckert-Talluri further discloses receiving the event

[Mittal, figure 1 and column 4, line 59 – column 6, line 9];

extracting the configuration command from the event [Mittal, figure 1 and column 4, line

59 – column 6, line 9]; and

presenting the configuration command to a native console [Mittal, figure 1 and column

4, line 59 – column 6, line 9].

Regarding claims 5 and 30, Mittal-Bruckert-Talluri further discloses the configuration

command is a configuration load command [Mittal, column 4, lines 48-52].

Regarding claims 6 and 31, Mittal-Bruckert-Talluri further discloses the configuration

command is a configuration execution command [Mittal, column 4, lines 59-60].

Regarding claims 7 and 32, Mittal-Bruckert-Talluri further discloses wherein the user

input is received in a graphical user interface [Mittal, column 4, lines 16-25], and further

comprising the step of displaying an execution log for the configuration command within

the same graphical user interface in which the user input is received [Mittal, column 4,

lines 41-43 and 52-55].

3.   Claims 8-23 rejected under 35 U.S.C. 103(a) as being unpatentable over Mittal-

Bruckert-Talluri as applied to claim 1 above, and further in view of John et al., (US

Publication No. 2004/0088412), (hereinafter John).

Regarding claim 8, Mittal-Bruckert-Talluri further discloses receiving, at a single console

control point for a network device cluster, first user input [Mittal, column 2, lines 39-46];

wherein the cluster comprises a first switch device, a stack consisting of one or more

active routers and one or more standby routers, and a second switch device [Bruckert,

paragraphs 27, 106 and 112].

Mittal-Bruckert-Talluri does not specifically disclose requesting an operational overview

of the cluster; and

generating and displaying an operational overview of the cluster, wherein the

operational overview comprises a status indication, connection information, failed

device information, and a first access icon for accessing information about the stack.

However, John, in the same field of endeavor discloses a cluster management console

presenting cluster information to the user including cluster status, configuration, errors,

warnings and an iconic view of the associated clusters [John, paragraph 92 and figure

11].

It would have been obvious to one having ordinary skill in the art at the time the

invention was made to include a GUI console with an overview of the clusters and any

status information associated with them in order to provide the administrator with easy

access to monitor the status, configure the cluster system when needed and provide

updates to the cluster on an as needed basis.

Regarding claim 9, Mittal-Bruckert-Talluri-John further discloses receiving second user

input that selects the first access icon [John, figure 11];

generating and displaying a device operational overview for devices in the cluster, a

device status indicator, device connection information unique for each router within the

cluster, failed connection information, and a second access icon for accessing

information about connections of the first and second switch devices and the stack

[John, paragraphs 92, 95, 97 and 99 and figure 11].

Regarding claim 10, Mittal-Bruckert-Talluri-John further discloses receiving third user

input that selects the second access icon [John, paragraphs 92, 95, 97 and 99 and

figure 11];

generating and displaying a connection operational overview for connections of the

cluster, wherein the connection operational overview comprises, for each connection of

the stack, a connection status indicator and one or more values of attributes associated

with the connection [John, paragraphs 92, 95, 97 and 99 and figure 11].

Regarding claim 11, Mittal-Bruckert-Talluri-John further discloses receiving first user

input in a user interface (UI) at a single console control point for a network device

cluster [Mittal, column 2, line 39, reboot cluster] that identifies a first switch device and a

second switch device for the cluster [Bruckert, paragraph 27];

receiving second user input in the UI that identifies a plurality of network elements

[John, paragraph 92] for a router stack of the cluster [Bruckert, paragraph 27];

receiving third user input in the UI [John, paragraph 92] that defines at least one first

connection of the first switch device [Bruckert, paragraph 27] in association with at least

one network element in the stack, and at least one second connection [John, paragraph

92] of the second switch device [Bruckert, paragraph 27] in association with the at least

one network element in the stack [John paragraph 92]; and

associating the first, second, and third user input in a cluster object [John paragraph 92]

that programmatically represents the cluster [Mittal, column 2, lines 39-40].

Regarding claim 12, Mittal-Bruckert-Talluri-John further discloses receiving information

specifying that a network element in the cluster has failed [John, paragraphs 92, 95, 97

and 99];

based on the cluster object, selecting a substitute network element from among one or

more available network elements from the router stack [John, paragraph 92];

receiving connection configuration information from the identified network element

[John, paragraphs 92, 95, 97 and 99]; and

based on the connection configuration information, re-configuring the substitute network element and the first and second switch devices associated with the identified network element, wherein the re-configuring causes the first and second switch devices to change one or more connections from the identified network element to the substitute network element [John, paragraphs 92, 95, 97 and 99].

Regarding claim 13, Mittal-Bruckert-Talluri-John further discloses creating one or more sets of commands to configure [John, paragraphs 92, 95, 97 and 99] the first and second switch devices [Bruckert, paragraph 27]; and
publishing a configuration load event that includes the commands and that targets only the first and second switch devices [Bruckert, paragraph 27] associated with the identified and substitute network elements [John, paragraphs 92, 95, 97 and 99].

Regarding claim 14, Mittal-Bruckert-Talluri-John further discloses in response to the configuration load event, each of the first and second switch devices connecting to a cluster manager and receiving a particular set of commands [John, paragraphs 92, 95, 97 and 99];
at each of the first and second switch devices, processing the particular set of commands, wherein processing includes causing the first and second switch devices to change the one or more connections from the identified network element to the substitute network element [John, paragraphs 92, 95, 97 and 99]; and

at each of the first and second switch devices, publishing a configuration complete

event to acknowledge completing the processing of the particular set of commands

[John, paragraphs 92, 95, 97 and 99].

Regarding claim 15, Mittal-Bruckert-Talluri-John further discloses the third user input

includes information defining a set of commands used to reconfigure at least one switch

device [John, paragraphs 92, 95, 97 and 99].

Regarding claim 16, Mittal-Bruckert-Talluri-John further discloses the first, second and

third user inputs are stored persistently at a cluster manager [John, paragraphs 92, 95,

97 and 99]; and

wherein each of the switch devices and the plurality of network elements persistently

stores startup configuration information, but does not store the first, second and third

user inputs [John, paragraphs 92, 95, 97 and 99].

Regarding claim 17, Mittal-Bruckert-Talluri-John further discloses the second user input

comprises information identifying one or more network elements from the plurality of

network elements as back-up network elements [John, paragraphs 92, 95, 97 and 99].

Regarding claim 18, Mittal-Bruckert-Talluri-John further discloses the second user input

comprises information identifying one or more network elements from the plurality of

network elements as stand-by network elements [John, paragraphs 92, 95, 97 and 99].

Regarding claim 19, Mittal-Bruckert-Talluri-John further discloses the step of receiving a fourth user input in the UI that modifies information received in the second and third user inputs [John, paragraphs 92, 95, 97 and 99].

Regarding claim 20, Mittal-Bruckert-Talluri-John further discloses the step of receiving a fourth user input in the UI that identifies the at least one network element as removed from the plurality of network elements [John, paragraphs 92, 95, 97 and 99].

Regarding claim 21, Mittal-Bruckert-Talluri-John further discloses the step of receiving a fourth user input in the UI that disassociates at least one switch device with at least one network element from the plurality of network elements [John, paragraphs 92, 95, 97 and 99].

Regarding claim 22, Mittal-Bruckert-Talluri-John further discloses the first, second, and third user inputs define a logical stack object, wherein the logical stack object is identified by a stack name and represents a logical grouping of at least two switch devices [Bruckert, paragraph 27] and at least one network element [John, paragraphs 92, 95, 97 and 99].

Regarding claim 23, Mittal-Bruckert-Talluri-John further discloses the step of receiving a fourth user input in the UI that requests sending a command to all switch devices and all

network elements represented by the logical stack object [John, paragraphs 92, 95, 97

and 99].

4.   Claim 35 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mittal-

Bruckert-Talluri as applied to claim 1 above, and further in view of Hsu et al., (US

Publication No. 2001/0021198), (hereinafter Hsu).

Regarding claim 35, Mittal-Bruckert-Talluri does not specifically disclose the first and

second switch devices are associated with different networks.

However, Hsu discloses multiple switches connected to different networks [Hsu, figure

4, items 420, 415, paragraph 16].

It would have been obvious to one having ordinary skill in the art at the time the

invention was made to incorporate multiple switches connected to different networks in

order to provide for a backup switch in case of failure.

Response to Arguments

5.   Applicant's arguments filed 01/12/2010 have been fully considered but they are

not persuasive.

A – Applicant argues "Bruckert describes a cluster of network devices (Bruckert: Para

[27]), but does not describe that active routers in the cluster are treated as a whole for

any purpose and thus, separately from the remaining devices in the cluster, such as switches, etc. There is no teaching in Bruckert about a single console control point that receives user input specifying an operation to be performed only on a plurality of active routers as a whole, as claimed, but not on the remaining devices. Further, Bruckert has no suggestion to transform a specified operation into device- specific operations to be performed only on the active routers in a cluster, as claimed. Moreover, Bruckert does not describe "concurrently communicating a configuration command to each of the active routers," as claimed, but not to the remaining devices. Therefore, Bruckert does not cure the deficiencies of Mittal with respect to the configuration command that is 1) concurrently transformed into one or more device specific operations for each of the active routers, 2) concurrently communicated to each of the active routers and only to each of the active routers, and 3) concurrently performed on only active routers in the clusters as a whole, as recited in Claim 1.

Talluri does not cure the deficiencies of Mittal and Bruckert with respect to the configuration command performed concurrently on the active routers and only on the active routers, as recited in Claim 1. Talluri describes a cluster of nodes which are employed to perform computational tasks. (Talluri: Col. 1, 11.53-54) In particular, Talluri's cluster comprises client computers and servers, wherein the client computers access information contained in databases stored on the servers. (Talluri: Col. 1, 11.41-45) In Talluri, a node can be either a client computer or a server and the node is configured to perform one or more computing tasks. (Talluri: Col. 1, 11.54-55) However, Talluri fails to describe "performing the specified operation on active routers ... as a

whole," as recited in Claim 1. Talluri dynamically reconfigures some, but not necessarily

all nodes in the cluster, and the distinction which nodes are reconfigured depends on

whether a particular node needs to be reconfigured (Talluri: Col. 8, 11. 10-12), not

whether the particular node is an active router, as recited in Claim 1. Talluri describes a

cluster configuration repository (CCR) that can be shared between the nodes and that

contains a description of the cluster topology. (Talluri: Col. 5, 11.64-65) Each node in

Talluri may make a copy of the shared CCR (Talluri: Col. 5, 11. 18-20), make changes

to the copy of the CCR and upon approval, write the current configuration information to

the shared CCR, which then can be copied to other nodes. Reconfiguration in Talluri

pertains to changing the topology of the computational cluster, but not to performing the

a device configuration command on active routers.., as a whole, as recited in Claim 1.

Talluri does not concurrently perform an operation on active routers by transforming the

specified operation into one or more device-specific operations for each of the active

routers, as recited in Claim 1. The Office Action alleges that Talluri describes the above

feature because in column 6 (11.47-49) Talluri describes a callback function which is

executed on all the nodes in the cluster when the configuration file in the CCR is

updated. (Office Action: page 4) This is incorrect. The callback in Talluri pertains to

informing all nodes in the cluster that the configuration of the cluster is changed and that

the nodes should update their copies of the CCR. (Talluri: Col. 6, 11.47-55) However,

Talluri's callback is not a device-specific operation specified in the user's input, as

recited in Claim 1. In Talluri, a user input is a configuration change performed at a

particular node on the particular copy of the CCR, not the callback notification sent to all

the nodes to update their copies of the CCR. In Talluri, the user's input is not "transformed into one or more device-specific operations for each of the active routers," as recited in Claim 1. In Talluri, a notification to all nodes is sent when the particular change is approved (Talluri: Col. 4, 11. 10-14). However, the change itself is not concurrently communicated to each of the active nodes. In Talluri, each node implements the changes on its own and according to own time schedule, not by transforming the specified operation sent concurrently to all the nodes. In addition, as described above, since Talluri does not describe performing operations only on active routers, the notification is sent to all the nodes, not to the routers, as recited in Claim 1. The Office Action alleges that it would have been obvious to combine Mittal and Bruckert with Talluri' s approach for concurrent modification of the nodes within a cluster in order to make updates to all nodes so that none of the nodes or transactions is out of sync. (Office Action: page 4) This is incorrect. Even in combination, Mittal, Bruckert and Talluri do not provide the claimed approach. A combination may provide a method for rebooting all nodes in the cluster (Mittal) including all switches, routers and servers (Bruckert) and updating the configuration information for all the nodes after the change is performed (Talluri). However, no combination provides an approach for concurrently performing the specified operation on active routers in a plurality of active routers by transforming the specified operation into ... device- specific operations ... concurrently communicated to each of the active routers, as recited in Claim 1".

A – Mittal discusses specifying an operation to perform on the cluster as a whole [Mittal, column 2, lines 39, reboot cluster], Mittal does not discuss performing the operation concurrently (although rebooting is not the only operation that can be performed) and Talluri discloses concurrently performing an operation [Talluri, column 6, lines 47-49 and column 4, lines 1-14, having each node check for an update, device specific is disclosed by Mittal]. Further, Bruckert discloses the type of clustered system [Bruckert, paragraph 27 and figures 1a and 1b]. When combining Bruckert (the type of cluster) and Talluri (concurrently performing an operation) with Mittal (who discloses the rest of the limitations as defined above in item 2 (the 103 rejection) the motivation would be the ability to perform concurrent operations on a specific set of routers and switches in order to keep the fault tolerant system up to date in an effective way, keeping the system in sync within each router.

6.   In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.,* 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Conclusion

7.   **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later

than SIX MONTHS from the mailing date of this final action.

Examiner's Note: Examiner has cited particular paragraphs / columns and line numbers

in the reference(s) applied to the claims above for the convenience of the applicant.

Although the specified citations are representative of the teachings of the art and are

applied to specific limitations within the individual claim, other passages and figures

may apply as well. It is respectfully requested from the applicant in preparing

responses, to fully consider the references in entirety as potentially teaching all or part

of the claimed invention, as well as the context of the cited passages as taught by the

prior art or relied upon by the examiner.

Should applicant amend the claims of the claimed invention, it is respectfully requested

that applicant clearly indicate the portion(s) of applicant's specification that support the

amended claim language for ascertaining the metes and bounds of applicant's claimed

invention

Any inquiry concerning this communication or earlier communications from the examiner should be directed to WILLIAM J. GOODCHILD whose telephone number is (571)270-1589. The examiner can normally be reached on Monday - Friday / 8:00 AM - 4:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vivek Srivastava can be reached on (571) 272-7304. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

WJG
04/02/2010

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